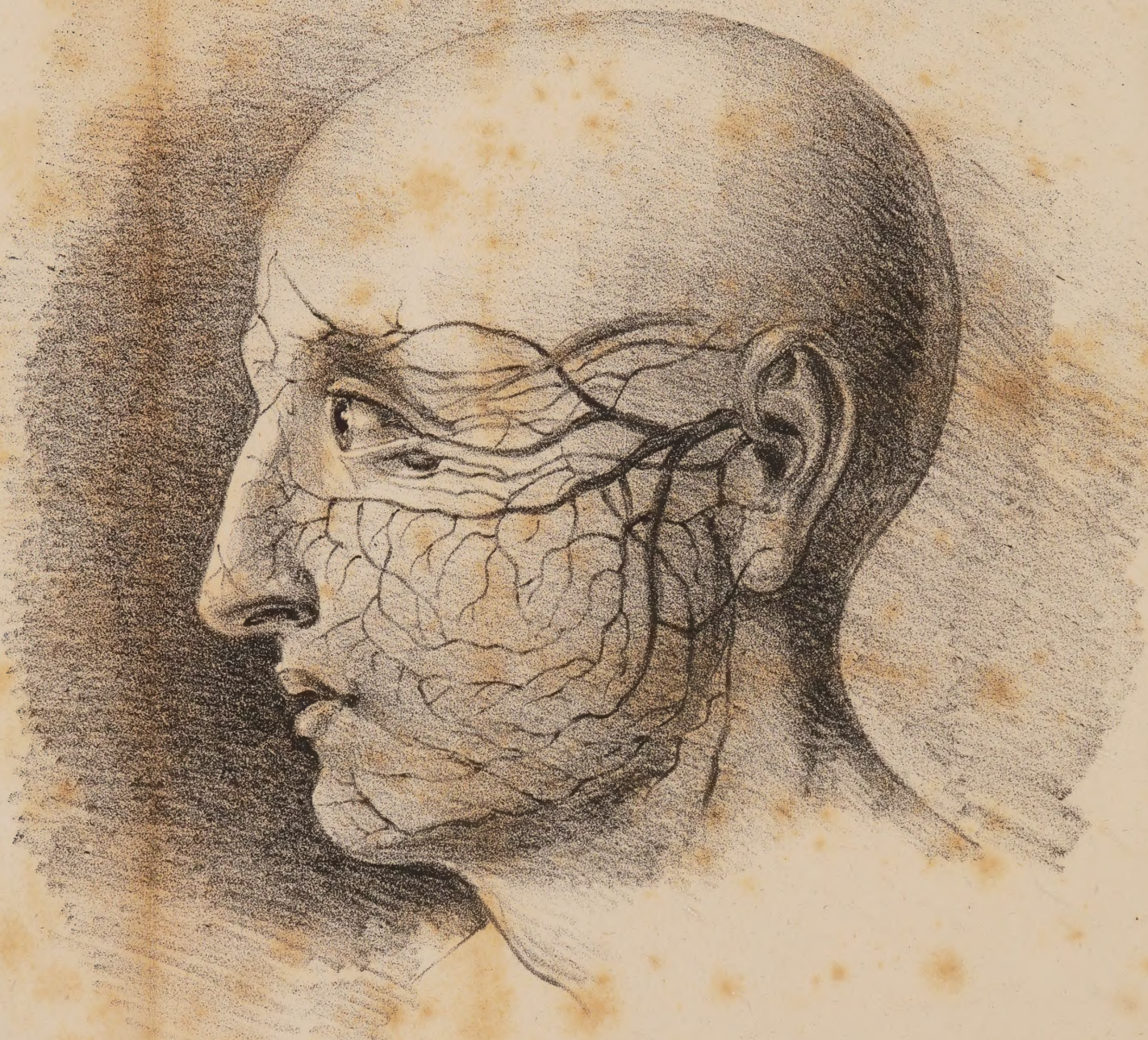
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UNDER THE PATRONAGE OF

HIS MOST GRACIOUS MAJESTY GEORGE THE IV.

And humbly dedicated, by permission,

TO HIS ROYAL HIGHNESS THE DUKE OF CLARENCE.

OPINIONS

ON

The Causes and Effects

OF THAT DISEASE DENOMINATED

TIC DOULOUREUX;

DEDUCED FROM PRACTICAL OBSERVATIONS

ON THE DISTURBED SOURCES

OF

Lateral Pressure, Distortion or Malformation of the Teeth;

BUT MORE PARTICULARLY THOSE NERVES

THE MAXILLARY SINUS,

And those conveying the disturbing sensations to the more distant extremities of the system.

THE WHOLE ILLUSTRATED BY

Three Lithographic Engravings,

WITH ANNEXED CASES CONFIRMATORY OF THE OPINIONS AND OPERATIONS,

AS ALSO

A PECULIAR, AND EASY MODE OF ASCERTAINING THE CAUSE, AND CURE;

BY CHARLES ASH,

Surgeon-Dentist to His Majesty, the Royal Household, and to their Royal Highnesses the Duke and Duchess of Clarence.

SOLD BY THOMAS AND GEORGE UNDERWOOD, 32, FLEET STREET; AND IN BRIGHTON, BY J. CORDWELL, REPOSITORY OF ARTS, 4, NEW STREET; AND AT W. TUPPER'S LIBRARY, MARINE PARADE.

1824.



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OPINIONS

ON

The Causes and Effects

OF THE DISEASE DENOMINATED

TIC DOULOUREUX;

DEDUCED FROM PRACTICAL OBSERVATIONS

OF ITS SUPPOSED ORIGIN,

IN

Lateral Pressure, Distortion or Undue Contact in the Teeth;

BUT MORE PARTICULARLY THOSE NEAREST

THE MAXILLARY SINUS,

And thence conveying its distressing sensations to the more distant extremities of the system.

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WITH ANNEXED CASES CONFIRMATORY OF THE OPINIONS AND SUPPOSITIONS,

AS ALSO

A PECULIAR, AND EASY MODE OF ASCERTAINMENT, AND CURE;

BY CHARLES BEW,

Surgeon-Dentist to His Majesty, and Royal Household; and also to their Royal Highnesses the Duke and Duchess of Clarence.

LONDON:

SOLD BY THOMAS AND GEORGE UNDERWOOD, 32, FLEET STREET; AND IN BRIGHTON, BY J. CORDWELL, REPOSITORY OF ARTS, EAST STREET; AND AT W. TUPPEN'S LIBRARY, MARINE PARADE.

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TO HIS MOST

GRACIOUS MAJESTY

GEORGE THE IV.

ILLUSTRIOUS SIRE,

THE general approbation and flattering success in this Country, and on the Continent, attending my "*Opinions on the Causes and Effects of Diseases in the Teeth and Gums*," most graciously sanctioned by your Majesty's favour and patronage, having stimulated me to further investigation, and exertion for the palliation and relief of human sufferings, peculiar to the *Masticating System*, and parts adjacent; has induced me to enter the Lists on a more extensive scale than in my former Work, against the complaint denominated "TIC DOULOUREUX;" and, in OPINION founded on instances, and cases, the result of nearly twenty years' practice, to endeavour at the developement of the *Origin*, *Progress*, *Prevention*

and *Cure*, of this distressing Disease. And should I therein be found so fortunate, as to have thrown *light* on a subject, where *darkness* and *difficulty*, shrouding *torture* and *destruction* from the *search* of *science*, have sent thousands to the Tomb; the satisfaction, though great, will be inestimably heightened by having been allowed at least, to make the humble, but important attempt under the high auspices of your Majesty's favour and protection, which in conjunction with various acts of condescension and kindness from your Majesty, and branches of your illustrious family, continue to afford never failing delight to him, who with every sentiment of duty and respect has the honour to subscribe himself,

Your Majesty's
Faithful and obedient,
Humble Servant,
C. BEW.

Brighton,
May. 1824.

TO

HIS ROYAL HIGHNESS

The Duke of Clarence.

ILLUSTRIOUS SIR,

THE kind interest and condescension with which your Royal Highness has been pleased to regard my professional endeavours from their commencement, as Surgeon-Dentist to Your Royal Highness, Family, and Household, down to the present moment, has induced me to presume, through the medium of *Opinion* to offer to your Royal Highness's perusal a literary delineation, assisted by Anatomical and Mechanical drawings with accredited Cases, the annexed Treatise of the *Causes* and *Effects of the Nervous Affections of the Face, Teeth, and Extremities* denominated TIC DOULOUREUX. To the latter

of which by excitement in the *dental divisions of the nerves*, the origin and course of the disease may be distinctly traced.

Your Royal Highness's gracious Letter of approval, which accompanied the perused manuscript; together with the subsequent, additional commendations of my medical friends, have confirmed me in the design of demonstrating, publicly through the Press, those *Opinions* of the Disease which I have so long successfully in practice, privately delivered, with the most beneficial effects. Their failure or success with the Public at large, to which under your Royal Highness's auspices, they are now presented, it is impossible to calculate; but I humbly trust they will be mildly received, as they are meant, as humble offerings of additional lights, to illuminate a dark and devious sphere of human suffering, where the search of science, hitherto deficient in success, has vainly wandered in deceptive uncertainty.

However, *uncertain* as to the result of these *Opinions* with the Public, whose fiat is yet to be obtained; the certainty of possessing inestimable, and unequivocal proof of Your Royal Highness's consideration, and sanction, kindly extended through branches of your Illustrious Family and friends, will ever remain indellible in the remembrance of him, who, with every sentiment of esteem and respect, has the honour to subscribe himself

Your Royal Highness's

Grateful, devoted, and

Dutiful, humble Servant,

C. BEW.

East Street, Brighton,
February, 1824.

That the mode of ascertainment and treatment, which has for its avowed object, the arrest of progress, and complete extinction, of so distressing a malady as Tic Douloureux should be offered to the Public under the form of Opinion; will not appear so very remarkable, when we recollect the number of Lectural and Literary Treatises, which have at various times, from elegant, and erudite elucidators, entered the lists against this formidable malady; and as yet, all alike destitute of the effect desired.

The intemperate Theorist, who tries not with the *test of truth*, his pleased hypothesis, *with bitter disappointment pays his pains;* and on most subjects of magnitude and intricacy, such as concern the general good, or the peace, and welfare of society, though by due attention, rendered almost certain of success; still seem more secure when modestly asserted.

Advice, whenever offered, to ourselves, or others, never appears so acceptable, as when expressed, through the palatable medium of Opinion, and though the word

Opinion, "be not rich in hope," but like the meager lead, which rather threat'nest than does promise ought," still, the latitude it offers for fair discussion, through the medium of mature consideration, may like the clashed colision of cold flint and steel, be swiftly followed by such convictive flashes of chaste, and sound intelligence, as happily may render this hitherto dark, and devious subject, distinctly demonstrable, as meridian day. With this fervent hope, and after the manner of a former work, "*Opinions on the Causes and Effects of Diseases in the Teeth and Gums*," those particularly attachable to Tic Douloureux, are here presented to the Public, on the well-known adage "*the knowledge of the complaint is half the Cure.*"

The short time allowed to individuals in this troublesome and transitory life, should induce sentiments of *Samaritan feeling*, for fellow sufferers, amidst mankind in general; but the *medical* class in particular, who from inspections and calculations *behind the scenes*, of the complicated *cords*, *pulleys*, and *levers* which keep Life's Theatre, the Human Frame,

in motion, are best adapted, from reading and research, and the happy combination of Theory and Practice, to promulgate, and establish, most valuable additions to the general stock of useful knowledge.

Under this impression, the *Opinions on the Causes, Effects, and Mode of Cure for* Tic Douloureux, herein contained, are humbly offered to the Public; and, if through their perusal, and subsequent consideration, they can be found to conduce in any shape, to the comfort, or amelioration of the many suffering *victims* of this *Disease*, the happiness afforded to them, and their relative connexions, will be felt in a tenfold degree, by the delighted

AUTHOR.

TIC DOULOUREUX.

When under the august auspices of his present Majesty, George the Fourth, while Prince Regent of the British Realms, I was induced amongst a "*Series of Opinions, on the causes and effects of Diseases in the Teeth and Gums,*" to touch on Tic Douloureux, I really was bold enough to beleive from the Opinions I had offered, having remained unsubverted, from the flattering testimony of my friends, and the constant success of my practice for its removal, that this *terrifying tormentor* of the *nerves* of the *face* had long since ceased to be considered by the faculty as seriously formidable.

Subsequent circumstances have, however, convinced me, that wherever it should be deemed advantageous to invite investigation for the removal of an erroneous supposition

or the cure of a complaint, the subject should ever meet discussion distinctly. In this idea I have been still further strengthened by the alarming augmentation, of this malady, daily arising in my own observation; as also in the long sufferings, and recent Death of a Physician, as estimable in private Life, as *irreparable* from his talents, as a Public Practitioner.

In the observations I heretofore deemed it my duty to deliver in the form of *Opinions*, I endeavoured to shew the intimate connexion of this disease, with the Nerves of the Teeth, nearest in situation to the Maxillary Sinus, or that portion of the upper jaw devoted to the *disposition* of the four grinding teeth, anatomically denominated the *two bicuspides*, and *two molares*. Unfortunately attacks in the teeth, like fits of the gout, excite little or no sympathy, and less consideration in those who are happily strangers to the severity of their visitations, indeed the sufferers themselves demonstrating to proof the self-evident axiom, that pleasure is only the absence of

pain; on the subsiding of pain, either in the teeth or the extremities, because they *can* comfort themselves with the deceitful hope, that the paroxysm *may not* be repeated, feel little solicitous as to the *rise* and *progress* of the complaint, and thus by not ascertaining its *cause*, neglect the only rational, or probable means of preventing a return.

To the nervous Invalid at once the victim of fear, fancy, indolence, and imbecility, in a thermometrically heated apartment, with all the appaling apparatus of potions, pills, phials and prescriptions, what a dreadful designation does this disease derive from investigation of its French nomenclature and its attendant consequences; Tic Douloureux, *action convulsivedes nerfs*, in plain English, a painful throbbing in the nerves of the face. To any such sufferer whose nervous system, perhaps (and properly too) for the proposed recovery of a deranged state of health from climate, excess, age, or the awful visitation "of the Sins of the Fathers upon the Children, even to the

third and fourth generation," the very conviction of attack, by such disease, might on the mind, and enfeebled frame, produce disturbance amounting to distraction. And yet, as if enough had not been already done, on the tenor of intimidation, subsequent authors have applied themselves unsparingly to promulgate various other causes, elaborately and learnedly delivered, with the addition of long anatomical Latin appellations, in lieu of the French, and though differing in description, as to effect, all alike destitute of additional light on the subject, and compelling us to the confession of the incomplete conclusion, that whether named under the Latin delineation of "*Facie Morbus Nervorum Crucians*," or "*Trismus Dolorificus*," or the French phraseology of *Tic Douloureux*, it still appears no other than a *painful throbbing* in the *nerves* of the *face*.

To the nerves then, not merely of the face, but of the system generally, it may be expedient, first to direct the attention of those, whose pleasure it may be to

peruse this Opinion, and by a plain and unvarnished exhibition of their origin, their astonishing associations, and connexions with the comforts of the animal economy, to know how they are *competent*, by derangement, from the peculiarity of position, to implant painful sensations, and diseases of the most distressing description.

The nerves, on inspection appear to be firm *white cords*, which are generally supposed, and considered, to be a direct continuation of the medullary substance of the brain, and spiral marrow, and unfortunately, in the consideration of such difficult and devious paths of science, supposition must ever be taken as presumptive proof, by the philosophic traveller, in the absence of more conclusive evidence.

Their presence is observable under the form of *Funiculi and Fibrillæ*, some of the latter so diminutive, as scarcely to be visible to the naked eye, but easily so when assisted with the Microscope. The medullary substance of the *Fibrillæ* is

pulpy and tender, similar in appearance to the *Centrum Ovale*, the medullary substance of the brain, which forms a kind of nucleus, and is seen after removing the cineritious or ashy-coloured substance, and all the medullary parts with which it is mixed, lying between the cortical convolutions, and which were considered by *Vieussens*, as the great dispensatory of *Animal Spirits*.

Of this opinion, was the learned and elegant Dr. Mead, with the trifling additional difference, that he considered these funiculi fibrillæ or tunicas, so containing and continuing this pulpy and sensitive medullary substance from the brain, to the minutest parts of our system, to be so contrived as to be tubulous, and to contain within them a subtile and transparent fluid, with which he had ever seen the minutest of these *white corded* conveyers of sensation to the sensorium surrounded.

To this surrounding subtile fluid similar perhaps to the *aque labyrinthe* which fill

the *vestible* and *scalæ* of the cochlea * he appears to attach much importance, from the supposition, that it possessed an inherent self-electric property, by which the nerves were on certain sensations, stimulated to act as well as balanced in a perpetual state of lubrication.

The pulpy substance, together with the cineritious, or ashy-coloured substance which accompanies it, is enclosed by an extremely vascular covering, called from its tenderness the *pia mater*, it envelopes the whole mass of the brain, enters doubly between all the convolutions, and lines the different cavities called ventricles.

The arteries of the pia mater are the same with those of the brain, and are derived from the internal carotids, and vertebrals, the veins differ not from other viscera, except that they do not, as in other cases accompany the arteries.

* Waters which are found in small semilunar cells in the internal convolutions of the ear and considered by their vibratory action, as aiders in the conveyance of sound to the auditory nerve.

As a defence to the tenderness of the *pia mater*, a thin and transparent membrane in which no vessels have been observable, called the *tunica arachnoidea*, from its cobweb appearance, and the fabled transformation of Arachnia to a spider by the enraged Minerva, with whom she had dared to vie in the art of weaving; willingly and uniformly spreads itself over the whole surface of the brain, inclosing all its convolutions, but without insinuating itself between one of them, much in the same way as it performs a similar service to the exquisite sensations of the eye; in short, appearing and performing the operation of a cuticle, covering and defending the parts beneath,---but not to abstract, or distract, the readers of this Opinion on Tic Douloureux, by guiding them through a course of anatomical inquiry amidst medullary and membraneous substance, the accredited matrix of the intricate, tortuous, and endless threading of the nervous system,---I shall endeavour by describing its origin, to injury or disturb-

ance of the tranquility of some of the particular branches, to offer something like a rational, and radical relief, to the ravages occasioned by this distressing disease. The Brain, is declared to be the seat of sensation, and reason readily assents to the declaration, supported by proof beyond the chance of controversy.

The intended act supposed to be conceived in the Brain, is with the thought transmitted through nervous communications, and consigned to completion by means of the muscles most convenient for its accomplishment; while the achievement is effected without any apparent loss of time, the conception, and communication of thought and deed, like lightning, or the passage of electric fluid, being untraceable as to time, by the search of science. By nervous communication, sensations are conveyed to the sensorium, and by its revulsionary power, the conceptions of pain or pleasure are perfected.

A deranged state of the digestive system, although seated in the stomach, never fails through the channel of the *sympathetic nerve*,

with its attendant intermediate amaurosis (dimness of sight), buzzing in the ear, false impressions of displeasing odours, *et cetera*, to transmit its complaint to the head, and so *vice versa*. Indeed Anatomy, and Philosophy, have by the happy union of their exertions, proved to demonstration the connexions of the nervous economy throughout the animal system, and the consequences attendant upon their disunion; for upon the severing of these often seen, yet still incomprehensive, and still more incomprehensible agents 'twixt our thoughts and acts, all natures' "beauteous order is o'erthrown, confusion, past all calculation, quick ensues, and finally consigns the bewildered victim to destruction;"---indeed so decisive is the determination of these willing-wafters of pain and pleasure, making as it were themselves, the threads connective, both of *will* and *deed*,---that should the life-sickened suicide, fearfully flying before the presence of real, or imaginary ills rush unbidden into the offended presence of the Deity by destructive poison, he might, did but knowledge

direct his desperate hand, how, and where, to divide the *par vagam* of the *eighth pair* of these propellers of volition, safely and securely meet the death desired, unaccompanied with those paroxysms of pain, spasm, and convulsion, attendant on such unhallowed corrosive, and narcotic conductors to the grave.

The hypothesis here offered is but for the purpose of presenting to the comprehension of those not prone to the perusal of the principles, and experimental performances of nature and philosophy, the great and important functions sustained and consigned to the nerves throughout the animal economy.

Thus having admitted (ex necessitate rei) the brain to be the seat of sensation, it is of little consequence, and less worth cavil, to what particular place *belief* induces us to assign the *sensorium*, for whether it be in the famed *centrum ovale*, the white pulp of the *medullary substance;* or the *cineritious*, or ashy-coloured associations with which it is attended; the tender and

penetrable *pia mater*, or the tenacious cob-web-texture of the enveloping *tunica arachnoidea*, the denser *dura mater*, or the connexion of the whole together, through the more mysterious *medulla oblongata*, thence to be distributed in thread-like form, through the *cervical*, *spinal*, *lumbar*, and other foramina, to the performance of their more important purposes, of which, as well as their exact origin, composition, and peculiar principles of action, we know little else, than, that they are stimulated to susceptibility, by *sound*, *touch*, and *interruption;* and further than this " function is smothered in surmise," and though conjecture and supposition would supply the place of certainty, the prospect of success appears still dark and impenetrable to the unsatisfied search of reason and science. But, as it were to compensate for this insufficiency of philosophic information, we have the evidence of our senses to prove that these undefinable *funiculi*, *fimebria*, *fasciculi*, or *fibrillæ*, are profusely, and infinitely furnished by the divine Author of our being, as

conductors of sensation to the sensorium, whether, as purveyors of pleasure, or warning defenders against darkness and danger.

By the nerves of vision, the hostile approach is descried, or propelled by the prompt preparation of the ready arm, as is the approach of pleasure welcomed by the sparkling-eye, or rapturous touch, by penetrating thrill, or palpitating heart; the noble sympathies of which, obedient to the admonitions of the nerves, are controlably capable of yeilding the greatest extent of elevation, or depression, through the impervious power of these incomprehensible agents. Indeed, though *visible*, and *tangible*, and known to be subject to the laws of nature, through disease, decay, and dissolution, they are as wonderfully valuable to the existence of animal welfare, as *air* and *light* to the uncircumscribed universe, without which the blessings of *sound* and *vision*, would have remained for ever unknown to its numerous inhabitants.

Having, but poorly I fear, endeavoured to explain to my readers' comprehension

the origin of these diminutive substances, but mighty engines of human intellect, I shall, by pointing out the position in which they are usually presented to our view, (still under the form of Opinion) aim at accounting for those sensations, and feelings, with which through their agency our system is more or less associated.

From the anatomical conviction that these *cords* of communication most copiously accompany all the vascular and muscular portions of our system. I am led to the belief that the muscles (though the comparison must move in the ratio of major and minor betwixt the subjects in discussion) would be valueless without blood-vessels, and of no effect, but for the excitement of their accompanying nerves; and thus the *biceps flexor, brachii,* or *cubiti* * the *vastus externus,* either of which would cause

* The former of these muscles may be prominently seen, and felt in the middle of the arm a little below the shoulder; the latter, the large muscle outside the thigh.

a two-pounds weight to kick the beam, are stimulated to the appropriate performance of their functions by the *extremity* of a *slender thread* which would be denied admittance to the eye of a common darning needle.

The heart, the great centre of action in the animal economy, no matter whether the excitement be conveyed by contact, sight, or sound, has its action increased, or diminished by the stimulus conveyed from the mind (or sensorium) to the vessels which convey the blood through its auricles and ventricles; thus a joyous event striking the nerves, is supposed to stimulate the *semi sensitive* structure of the *arteries*, and by quickening the flow of the vital current so accelerate the expansion and contraction of the heart, that with a thought, by the circulating system, the diffusive warmth, like lightning, or its counterpart electric-fluid, flashes at once through centre and surface, while the countenance, the extremities, nay the whole living mass of amazing existence is lighted up with joy and rapture.

Thus we may infer on the opposite ratio, when displeasing or distressing sensations strike the nervous sensorium, the lack of the recently depicted stimulus, is succeeded *secundum artem*, by a lagging circulation, and of course a heaviness of the heart's action; the *venous* circulation, which is ever *slower* than the *arterial*, feels this falling off, in increased ratio; the veins with their heavy, black, and carbonized load, labour in performance of their duty, and press against the nerves; which it should appear never fail to transmit to the sensorium that sense of pain and fulness, which lasting heaviness, anxiety, or despondency never fails to throw over the system which seems to seek temporary relief in complaint, tears, and repose; till lightened by removal of the cause, aided by the effective contemplation of pleasing prospects.

Having thus endeavoured to shew the probable means, by which these sensitive cords are excited by circumstances, to the expressions of *pain* or *pleasure*, by communication with the sensorium, it is neces-

sary to state that their power of communication through amplitude of distribution is equally alert in every portion of our system, and that puncture of the ultimate points of our extremities, from the smallest sting or thorn, to the cannons' roar, or "heaven's artillery, thundering in the air," down to the diminutive chirping of the grasshopper, are simultaneously received, and correspondingly acknowledged.

From this infinite distribution of position in the nerves, we come to the conclusion, that they carry with them (no matter how, or what the composition may be) the susceptibility of the brain, and though after the entrance of the *pia mater*, and *tunica arachnoidea* in the *medulla oblongata*, we are unresolved with certainty, as to their further accompaniment, there appears no lack of sensibility; nor any positive proof that the *rete mucosum*, and *cutis vera*, may not be disposed to supply their places, or perhaps ultimately prove continuations of the membranes themselves. To this conjecture I am led from the total

impossibility (or at least, where life and health exert their sway,) of pleasurable, or painful contact, being applied to the extremest point of our system, unaccompanied by a corresponding sensation in the sensorium, too often exemplified in the punishment attendant on plucking a rose; the pricked finger of the inattentive school-miss while marking her sampler; or the dull dunce, whose cries at castigation, for time mis-applied, although expressed as near the sensorium as possible, are nervously excited in a diametrically opposite direction.

From these observations, we may be easily induced to give credence to the assertion, that, deprived of the nervous system, the rest of the animal economy, (no matter how important) would be valueless, and that by their assistance, both in surface and centre, we are brain all over, for if the contents of these *white cords* be not of the same substance with the brain; yet being the conveyors of its conceptions, and communications, in manner incomprehensible to human calculation; they are to all in-

tents and purposes, identified with it, and, as they act with each other, with each other must be associated.

Having already described how the *nerves* affect, and how themselves are likely to be *affected* by changes in the ordinary course of the blood's circulation, through sudden impulses of joy and sadness, it is material to offer to the consideration of the reader, that these affections are most probably produced through the power of the nerves, nearest the arteries, on the one hand, and the *nerves* nearest the *veins* on the other, as joy, by acceleration of circulation, flushes the face, while fear or painful surprise, by retarding, is seen to blanch it; indeed, when once the belief shall be established, that the nerves, by an inherent revulsionary principle, act upon the *blood*, and by the *blood*, are acted upon, we have only to dilate a little upon the disposition, and the proneness to excitement of these active agents in the animal structure, to see the road readily open for the consideration of the cause and dismissal, by cure, of the (at

present) appalling disease, termed *Tic Douloureux.*

Whoever has felt or seen the process of inflammation in the slightest or greatest degree, in the surface of the human system, will easily recollect the first symptoms of the attack to have been a tense feeling about the parts affected, accompanied with fulness, irritation, and redness: and here it is proper to premise, that, before the patient himself had been fully apprised of its commencement, the nervous cord of sensation or its *recurrent branch* faithful to its duty, had declared to the sensorium the presence of interruption of the blood's circulation in the parts affected, (even in the distance of the foot and the head) and soon after confirmed by the sight, or the *feel,* of the patient; the advance of which continues through the regular procedure to suppuration, unless checked, and cured by appropriate applications.

Thus it is in the same degree with punishment inflicted by rods or thongs, the pain produced by percussion, is an-

nounced to the sensorium, by the *nervous net-work*, immediately in the vicinity of the scene of action, while the quantity of blood increased by the warmth of excitement, by distention of the vessels destined to contain it, may fairly account for that redness which ever accompanies the continuance of contact on the parts affected, till the rupture of these surface-seated vessels, by pouring forth their tributary store, shield, for awhile, sensibility by numbness; yet, in truth, but for awhile, for on the parts becoming cold, coruscations of sensation, are passed to the sensorium, and by imagination, or sleep especially, the whole is revived, and long preserved through the power of interior and exterior impression.*

* On this principle has arisen, we may infer, the favourite method in Foreign Riding-Schools, where the young horses, while breaking for the army, are never immediately rubbed down after their exercise; but are suffered to cool in the stable, in order that the impressions made on the skin by the correctional of whips might the better convey both *fault*, and *castigation* to recollection.

It may be asked why this figure should be introduced in an *opinion* offered to the public, on the origin, and cure, of a complaint, with which it appears to have little affinity, and is exclusively confined to academies, and our great, and established seminaries of sciences. To which I reply, the better to establish my position of the propelling of pain to the sensorium, thro' the power of nervous intercourse, and consequent revulsionary action, by the medium of the blood and muscles, and also from the conviction that early impressions, either of pleasure or pain, pretty commonly accompany us to the grave.

I may have the chance of mixing my opinions, with the imaginations of the *male* part of my readers, by the similarity of recollections, impressed on them by their precise professors, while propelling them through the paths of Syntax and Prosody.

Whoever may have contemplated closely, or casually, the nerves of the face,* in

* See Plate.

actual dissection, or in the excellent *wax casts* of the Anatomical Schools of the Continent, may easily conceive the nice, yet exquisite connections, of these susceptible agents of sensation; and more particularly the three distinct divisions of the fifth pair, or *trigemonus*, and also the seventh, and their more minute ramifications on the face, eyes, and jaws, by which they may correctly calculate the consequences of interruption, or infraction, of their peculiar properties or functions, from the causes I have already adduced, or may have further occasion to particularize in the progress of this Opinion.

By particularizing the nerves of the face, and their consequent attachment with the mouth, eyes, ears, and teeth; I wish to be understood, as adhering stedfastly to my before-delivered opinion, that *Tic Douloureux owes its origin to nervous irritation in the teeth*, although the painful sensations, like other affections of their peculiar structure, are delivered to the sensorium, or made

known to the patient at a distance from the seat of immediate attack.

I have before ventured to suggest on the authority of an eminent Anatomist and Medical Writer of past times, and others equally luminous of the present, that the incomprehensible materials of the nerves, bore the appearance of being but successions, or indeed continuations of the medullary substance of the *brain* and *spinal marrow;* and on the strength of these authorities feel induced to advance a step further in suggestion, and *suppose* it possible, that the *ganglions* so abundant on them, may eventually be discovered by dissections, to be something more that mere "*bulbous associations* of *these* accumulated cords," bundled together as blocks and tackles, acting like *jiggers*, for the assistance or adjustment of the main *cord* or *cable;* but in fact that they are *reservoirs* or *depots* of the same *cineritious* or *medullary substance*, material for the supply of any loss or diminution, which these active agents

may sustain, and thus have restored to them in common with other arrangements of the animal economy.

The blood's circulation through the teeth, as well as all the circumjacent parts of the masticating system, both centre and surface, being in these enlightened days indisputably admitted; and the score that where such circulation exists, *nerves* are its certain associates, comfortably clears from *rubbish* and *impediments* the road by which I hope to direct my reader, to *discuss*, *dismiss*, and *redress*, the injuries, arising from Tic Douloureux.

Although I know, I may possibly be accused of imperfection in my *exposition* of this malady (by those who know nothing of the matter) if I do not state something on the manner of the blood's circulation through the Teeth: and more especially as some portions of the persons, into whose hands this Opinion may fall, never having by good fortune, felt the ill-effects of the malady, may never have bestowed a thought on the subject.

To such it may not be amiss to state that the *dental arteries*, being branches of the internal maxillary artery, by ramifications, deliver the vital streams to the teeth of the upper and lower jaws in their respective sockets or alvcoli, at the point of each root; which, according to the usual routine of circulation, is returned by their periosteum, or exterior membranes in close association with the membranous linings of those sockets, passing severally through the gums and parts adjacent to the internal jugular; completely accounting for the blood usually found on the fangs of a recently-extracted tooth, and the florid *sanguiferous drop* pendant to a *cord* or *thread-like* substance at the extremity.

Thus blood, from a fractured tooth, with its disease and destruction from *pressure*, producing rupture of the vessels composing its circulating system, is easily accounted for, as also the accompanying pain which proclaims its progress through the peculiar structure of nervous association, the seat of which, like another *medulla oblongata*,

ganglion, or *brain* itself, curiously enclosed in its tunic or membrane, may be seen for a few seconds only, by any one adroitly dividing a recently-drawn tooth with a smart, short, stroke of a small hammer.*

Having thus fairly accounted for the flow and ebb of the vital fluid through the teeth and gums, the parts adjacent, and its returning reception in the internal jugular-vein, it is time to turn the attention of the reader to the result of that reasoning which induces me to ascribe the origin of *Tic Douloureux* to that particular portion of the masticating system, nearest in situation to the maxillary sinus, or in other words, the position usually occupied by the four grinding teeth of the upper jaw, under the appellation of the two *bicuspides* and two *molares*, that is, the *two smaller* and *two larger grinding teeth.*

It being my wish to prove the attack and progress of this complaint, as perfectly as possible, to the comprehension of the

* See Plate.

peruser, and most especially to those unaccustomed to anatomical observations, that the maxillary sinus, (a hollow plate of bone, a good deal resembling a bean pod,) situated immediately above the teeth, I have named with its neighbour, the *pituitary fosse*, or other portions of bone in the animal economy, whether hollow depressions, or prominences, are equally lined and covered with vascular and nervous membrane, capable of communicating the pains attendant upon injuries, or disease to the sensorium.

I have before stated heat, to be generated by percussion; and conceive pressure in a concomitant degree, by continuation of excitement, to the parts exposed to the proof, competent to the production of heat in an equal ratio with percussion itself; but with regard to the case now under consideration, namely *the human structure*, it does more, it attracts blood; increases its quantity in the parts affected, which is ever known and felt, by sensation of heat without, fulness in the vessels within, and an increase of saliva,

or watery fluid to assuage or defend, the parts so suffering by excitement.

These observations, although in the present instance pointed peculiarly at the *teeth*, yet in a philosophical point of view, may be rendered comprehensible to the meanest capacity by retrospection, to the *tinder-box*, the repitition of blows, inflammation from bruises, or the beneficial *furtherance* of *heat* by *friction*. Tic Douloureux seldom seems to make its attack till that season, or period, in which nature has accomplished the usual compliment of teeth, for the support and service of the masticating system, and is oftentimes solicited, or aided in its approach by the insufficiency of space in the jaw destined for their reception.

This observation, is but too often demonstrated by the derangement, and disease of the *four teeth* alluded to, by the *wedge acting* addition of the *dentes sapientiæ*, or "*teeth of wisdom.*" Of the many persons I have seen, and relieved from *Tic Douloureux*, all were uniform in the description of the *darting pains*, and uneasy sensations in the vicinity

of *these teeth*, in the first instance, and a sure succession of periodical plunging and twitching of the nerves of the face, nearest in situation to the teeth affected.

Having before remarked on the promptitude by which heat is produced, and augmented, by *percussion* and *pressure*, and the consequence of such augmentation, on the blood's circulation, it appears more than probable, that not only from pressure against the sides, of these before mentioned teeth, an increase of vital fluid is thus *arterially* shot into their structure, but the veins destined to return it by the periosteum, (or their vascular membrane which invests every part of a tooth's exterior, even under the *cortex striatus*, or enamel, which fits it for contact in mastication) are impeded in their operation, by the pressure alluded to, on the one hand, and distention on the other.*

* Any sceptical disciple of St. Thmoas may easily try the truth of this sensation by pinching, or tying a string tight round the extremity of his finger, and if insensible, to the pain, the contact be continued long enough, he will be ultimately rewarded for his folly, by extravasation and ulcer,

Having already defined the nice and intricate connexions of the nerves, and blood-vessels of the human subject, it will not, I trust, be calling on the peruser of this Opinion, to pay too large a toll at the turnpike of probability, to point at this pressure as the precursor and promoter of those twitching sensations in the face, denominated Tic Douloureux.

I am aware this Opinion may by some be opposed, on the score of distance from the scene action; but am equally aware the opposition would be unsuccessful, since mathematical precision with the point of the compass might prove its propinquity to demonstration, by the distribution of the branches of the dental nerves in the parts affected, actually passing through the *ossa maxillaria superiora*, while in the lower jaw, the trunk which distributes the dental

tantamount to precisely similar effect from pressure on the teeth, where extravasation of internal or external vascularity causes caries in the structure, while the pain by which it is accompanied and succeeded, through nervous irritation, is denominated Tooth Ache.

nerves to the teeth, is contained in the inferior maxillary canal.

This little discussion of distance, induces me to dilate on the subject, by the introduction of a case peculiarly applicable and analogous in assumption, that stumps as well as teeth, are competent to the conveyance of Tic Douloureux, even to the digital points of the extremities.

In the spring of 1819, in the round of my attendance through his Majesty's Household, I had advanced professional assistance to the Valet of one of his Majesty's Equerries, and in the course of the operation, after having ejected a rebellious and troublesome tenant from his masticating establishment, proposed, on the score of completing his comfort, the expulsion of a brace of small stumps joined together, between two sound teeth, but in proportion as the point of the *punch* was advanced for the purpose, his courage receded in an equal degree, almost leaving him as destitute of confidence as a Leyden Jar of electric fluid unloaded in the noiseless experiment of exposure to the point of the

conductor. A deficit in the treasury ever produces, *I promised*, so it was with my friend the valet, who promised whenever the parties portended perturbation to the peaceable inmates of the mansion, *turn out* should be the *order of the day*, unfortunately that day arrived much sooner than was expected, but, with an aggravation of that which I had predicted; for while in the act of elevating the cravat, to the chin of the General his master, the maxillary portions on which the stumps alluded to were placed, appeared as if, suddenly pierced by a pointed and burning instrument, which on the same instant conveyed the effect of its attack down the line of the face, neck, shoulder and arm, even to the hand and fingers, which, according to his description, dropt as if in a state of paralyzation; indeed, when he entered my room he appeared as one struck by that disease, while the description he delivered seemed declaratory of his belief that he really was so; most plentifully mixed with invectives on his own cowardice, and stupidity, in presuming to oppose my former

opinion, I hushed his alarm and treated the thing lightly, at the same time grasping the arm, with the intention of trying its power of motion, supposing its inflexibility to have arisen from accidental *jerk*, or *sudden elevation;* perceiving my purpose, he prayed me to desist, declaring his conviction of fainting even to falling on the floor, from excess of agony, attendant on the attempt. He sat down, and the stumps were extracted as easily as I had before predicted ; while dismissal of pain, soon admitted the arm's ascension almost to a level with the head, before taking his departure for the Pavilion.

By observations on the original seat of this young man's pain, and the course it had appeared to have taken, from the neck, and shoulder, to the extremity of the finger, I was led to suppose from the anguish in the maxillary region, that the immediate dental branch in connexion with the *muscular spiral nerve* had become affected, and particularly that branch of it, which runs under the tendon of the *supinatur longus*, and turns over the *wrist* to be distributed to the back

of the *hand* and *fingers*, however, certain it is; the cause of complaint struck the *sensorium* from the neighbourhood of the *maxillary sinus*, and spent the force of its effects on the *arms* and *fingers* sufficient for the adjustment of any difference of opinion, as *to distance* in the propelling powers of these incomprehensible promulgators of pain and pleasure.

In addition to this dilation on the distance of persons affected, I shall beg leave to mention a case with its attendant peculiarities which will place the matter beyond doubt; having occured to myself, and the circumstance being well-known through a large circle of my acquaintance.

From the space between the central incisors of the upper jaw, being somewhat wider than strict uniformity would sanction, together with a trifling *under hung* projection of the lower jaw, the tip of the tongue, from constant contact against the once sharp sided angles of the teeth (since reduced by the file) occasioned the production of a small excressence which rounded itself from col-

lision with the teeth, till it increased in form and size, to the appearance of a *pea;* as neither inconvenience, nor pain, accompanied its production, no particular attention was paid to it on my own part, and it might possibly still have retained possession of the spot so assigned it by chance; but that the frequent apostrophe of my friends, "What's that on your tongue?" first occasioned that consideration, which in conclusion consigned it to removal.

Business however, and some time lost in consideration on the subject, and the summer coming on, caused a pause in the intended operation, during which, the excressence in question, produced a curious, and somewhat ludicrous investigation of its origin.

Having been desired to attend an illustrious Foreigner, who with his amiable Princess, made a short sojourn in the Royal Pavilion at Brighton; while I was expatiating earnestly on the necessity of removing part of a tooth which had occasioned much inconvenience, and threatened further mis-

chief from ulceration of the Gums ; I was suddenly arrested in my observations by "*Monsieur! Ouvrez la bouche!*" I stopt of course, considerably surprized at the command which came from my Illustrious Patient, to inspect the mouth of his Dentist; but supposing my teeth to be the object of investigation, (which *heureusement* I have hitherto contrived to keep examples of precept, as well as practise) the mouth was so opened as to offer a fair exhibition, but, as my eyes rested on those of my patient I was perplexed to perceive him express disappointment, while emphasising "*Oh! ce n'est pas les dents, c'est la langue;*" still more surprised, (with I dare say a stupid stare of astonishment) at what was to succeed the exhibition of my tongue; when the ecclaircissement, *qu'est ce que vous avez sur la pointe de votre langue?* proved the said excressence the cause of question, which, in the first instance suffused my countenance with confusion, and ultimately convulsed me almost to suffocation in the attempt to repress risibility at the ridiculous *embarrass*

to which it had reduced me, and which I believe ended in its dismission.

But, though thus speedily condemned, the mode of consigning it to execution, called for much more consideration than I had conceived such a trifle demanded; the subject excressence having caught the attention of a medical friend with whom I chanced to be in conversation, I replied, "I think I shall divide it off with the blades of the scissars, or scalpel." I think, said my friend, "you had better *think twice*," "before you come to that same *cutting conclusion*, "blood---it will have blood" and the purple *tide* such an incautious act would set a-float, might not only prove inconvenient but dangerous." The intention, on my friend's suggestion was of course abandoned, and removal by ligature substituted as the safer expedient.

On my return home, and leisure for a *few moments* affording the necessary time, the tying operation was performed in a trice, before the glass in my surgery.

At first it certainly felt odd, but the

gradation of sensation I was not allowed opportunity to scan, from the arrival and continued successions of engagements, till near the close of the day, with the exception that I felt the tumour *tense*, and a sense of *heat* radiating as it were, from the *isthmus* of the excressence embraced by the ligature, throughout the tongue, but more particularly up the under surface of the sides, and the situation of the two glosscus, and lingalis muscles, this I bore with a patient shrug (for sufferance is the badge of all the tribe of Adam's two-legged deseendants in some shape or other,) and peculiarly placed the sensation I then felt, to the account of having been compelled to embrace with my ligature, some of the blood-vessels of the tongue, which are large in proportion to its dimensions, and with them, the extremities of the nerves, branches of the fifth, eighth, and ninth pairs, but more particularly the fifth, which apply peculiarly to the points; but, indeed, if my recollection serves correctly, the eighth and ninth pairs took equal offence at the restrictions imposed on them,

and laboured lustily in their vocation, by conveyance to the sensorium for restoration to freedom, but no, as I had commenced, I was determined to persevere, and the more so, as the blackened appearance of the protuberance, announced the work to be proceeding as prosperously as I could wish.

Although the pain attendant on the operation, which was commenced in the morning, continued to augment through the day till night, I still held my purpose, and bestowed myself in bed, with the French adage "*Il faut souffrire pour etre belle*," and hoped for a much better night than I expected, though the tongue broiling Israelitish expiation, now and then put the drowsy God to flight. The next day, sensation, at the original point of contact had nearly ceased, but the parts in distance, most amply made up the deficiency, the veins appeared enlarged; the muscles tense, and distended; articulation was to a certain extent impeded, so as to occasion remarks from those I addressed. No secret was made of the cause, and the curious questions attendant on the

occasion, coupled with inquiries of causes, and effects, and the probable consequences, with the ollapodrida of *learned* and *ludicrous* assertions displayed on the occasion, called risibility, to the relief of my pain, and perhaps aided the completion of the operation, which was acheived after another night of torment and nervous perturbation; indeed, so wretched was the sensation, that in extremity of torture, together with the disturbed state of the tongue, I descended to my surgery in the dead of the night, and standing before a mirror with a candle in one hand, and a scalpel in the other I sought relief and repose by severing the ligature: but the operation had proceeded too far, to be thus appeased. I returned to bed with little alleviation of my pains, frequently putting in practice, though on a more copious scale of deglutition, the prayed for experiment of Dives---dissipating the distractions of a burning tongue by cooling drops of water; but that night was certainly the last of my sufferings, the protuberance which attained the size and appearance of a small

privit-berry, cast off in the course of the day; and by again delivering me into premature comfort has since afforded me ample opportunities of trying *conjectures* by the *test of truth*, and thence deducing those diagnostics (though apparently impeded by distance) of nervous disturbance, detectable in the disease denominated Tic Douloureux.

Having by these discussionary digressions, sufficiently established that distance, is no impediment to the delivery of sensations by the nervous system, I shall deem it my duty to particularize in the best possible way, the causes from which the inferences are drawn, which induce me to ascribe the distressing effects of *Tic Douloureux*, to the *Teeth* already named, and by what means such effects are produced.

I have before stated that this disease is seldom observed 'till the jaws, particularly the upper, have obtained their compliment of *teeth*; the *female* earlier than the *male*, (I mean by the arrival of the *dentes sapientæ*) which verbal announcement to a smart little French woman produced the

reply, "*Je suis bien aise, les dames sontes toujour plus sage que les hommes,*" by the time of *their* arrival, if not before, the maladies mixed up in our frail frames, have exposed the system to the requisite, precautionary principles, resulting from the practice of *physic*, by *diagnosis of domestic medicine*, intensity of scientific attainment, high-seasoned cookery, quack compositions, closed by an accumulation of accredited drafts on disease and death, in a *batterie de la medicine* discharged at the constitution, by the regularly-admitted Members of the College; while the reason assigned, for the necessity of such exhibitions, is ever ascribed to disorganized state of the *liver*, and the derangement of the *chylopoietic viscera*, 'till, "*from the child in arms,*" down "*to the lean and slippered pantaloon,*" human nature has become as familiar with *quick silver* in its *crude* and *chymical state* as if it was intended to transfer the knowledge of atmospheric variation, from the established modes of ascertainment, to the living population of the world in general;

as every being in the community, may be fairly considered a *moving barometer* on *two legs.*

Could I bring myself to conclude these observations digressing, I would apologize to the reader for their introduction, but doubt not, that he is satisfied to conviction, of the almost impossibility of offering medical exhibitions to the human system, particularly the mineral class, unattended more or less with affections of the teeth. Advance in life, or premature debility from derangement of system, by the contraction of the *alvcoli,* or disposition of the large teeth of the upper jaw, to *descend* in equal measure, as those of the lower, are found to *rise,* too often renders the roots visible, and is sillily ascribed, to a receding of the gums.

The *heads of all teeth,* being larger and broader than the *cervix* or necks, (that part usually embraced by the gums) their descent, or rising, does not only produce pressure, by displacement in themselves, but on the sides of their associates, independent

of the violence committed by their occasional distortion in descent, on the periosteum which covers the roots, associated with the membraneous linings of the socket, from whence their descent is effected. The pain attendant, delivering its heated sensations to the sensorium, through the *dental distribution of the nerves* nearest the parts affected; by their throbbing, and twitching, throughly proving the diagnostic of this case usually denominated Tic Douloureux.

Opinion some time ago suggested peculiar modes of cure for this malady, by dividing the agitated, or excited branches of the dental nerves with the scalpel; and after having been in defiance of reason and probability, long enough fashionable to disfigure with scars and sicatrixes, a formidable number of deceived devotees to variety, was at length abandoned as abundant in pain, but unpropitious with regard to the cure proposed, and expected; indeed the famed speculation, (for it was no other) like Homer's Greek contagion, had its origin of operation, with the four-footed victims of the Veterinary

College, to whom with less mercy, the actual cautery was cruelly added, to the nerve-cutting practice of the scalpel, for the cure of alarming affections in the *feet* and *fetlocks* of these noble animals, till the fanaticism fell off, from the frequent falling down of the horses, owing we may conjecture, to the interruption, and imperfection in nervous communication; and the no less anxiety of the riders, who began to imagine (had the practice continued) they should stand in need of a *neck in reserve*, like the erroneously imaged sign the *Swan with two Necks in Lad Lane.*

Having thus stated the mode of attack, and attendant disturbance of the human system, in Tic Douloureux, I deem it my duty to state, that I have met many persons in my own practice, long subject to the effects of this complaint, but wholly ignorant of the cause; and this ignorance, not only existing in the patients themselves, but in the professional persons to whom they had applied for relief.

A pretty, interesting, and highly accom-

plished young lady, whose family were residents of long standing in Brighton, applied to me for relief from pain in the face, which her Medical attendant had told her, he conceived to originate in the *teeth;* tenderly laying "her finger" on the immediate space of her fair and fear-blanched cheek, in a line from the portion of the upper jaw, occupied by the two buispides (or small grinding teeth) and the angle of the right eye. Observing her to be agitated, and feeble, I entreated her to be composed, and seated; and while surveying the teeth, as if by accident passed my index finger-nail up the cervix of the second bicuspis, or second small grinding tooth, lifting a little of the gum, from the neck of the tooth; as I suspected, from its close contact with the first large molaris, the moment the *periosteum*, or *covering membrane* of the root was pressed, the pain from the excited surface, darted off afresh in the line she had before described; while a gentle exclamation, "Oh! don't do that," confirmed my suspicion, and shewed the course I had to take, accompanied with the

declaration, that she had been unconsciously suffering from Tic Douloureux. To this promulgation her alarmed reply was, "Oh then my misery is complete, for that complaint is, I am told, incurable!" To which I jocosely answered, "so far from that, only yield me your confidence and patience for a little, and I'll instantly consign your pain and fear to oblivion in my Surgery." As extraction was declared decidedly unnecessary, terror subsided, suspicion vanished, the proposed operation was unhesitatingly permitted, and complete success the consequence. A few short days saw languor, and lassitude receding before the rapid strides of returning strength, while the roseate hue of health, modestly asserting its empire over the recently lillied lineaments of her interesting countenance, gratefully confessed in conjunction with her laughing eyes, the happy effects of revival, from a state of sickness, of ten weeks' confinement, between bed, couch, and chamber, comfortably concluded in half the number of minutes.

To enumerate all the Cases of *Tic Dou-*

loureux, which have come under my consideration, and have been crowned with convalescence, by the pecular *modus operandi* which it has been the chief object of this production to promulgate, for the advantage of practitioners, and the public in general, would fill a volume, and after the fatigue attendant, the reader would only arrive at the information my inferences have heretofore adduced, that the Disease, the subject of this Opinion, is produced by undue *pressure* in and on the *teeth*, causing excitation or irritation of the *dental branches* of the *nerves*, whose extremities we find infinitely diffused on the face, and parts usually affected. *

In the selection of Cases therefore, I shall be desirous to describe such, as varying somewhat in situation and originality of sensation, still had their *cause* and *effect*, traceable to *teeth* and *nervous irritation;* and thus, entitled to the denomination of Tic Douloureux.

An elderly man of moderate independ-

* See Frontispiece.

ence, residing at Newhaven, in the County of Sussex, in the Summer of 1820, who had been long unknowingly subjected to *Tic Douloureux*, designated by his medical attendant "*rheumatic affection of the face ;*" at the anxious instigation of a friend, desired my assistance. Having announced the day and hour I would attend, I was introduced almost at the door of the person's house, to his Medical Practitioner, who, on hearing my name, announced himself as such, adding, that he had taken the opportunity of not being immediately wanted at home, to give me the meeting; his friend not yet having made his appearance, to state to me the hopelessness of his case; which he described as being decidedly *rheumatic intermittent* which had remained immoveable to every effort; concluding his observation by conceiving a *mercurial course* the only remedy *yet untried* and most likely to be successful. Before he had quite concluded his observation he was called away, and his absence from the room succeeded by the immediate object of my visit, who came out of an adjoining

chamber, wrapt about the head with linen cloths, like another resurrexioned Lazarus, meager in form, pale in face, and feeble from debility.

From himself I learned that he had long been afflicted with this Disease, which had not only made inroads on his health, but also on his imagination, having been subjected to torment during day, and interrupted repose during night, as he in his own words described *in a most unaccountable way*, frequently starting from sleep, with the sensation of loud smacks on his face, as if from sharp irons, sometimes feeling as if they were cold, and sometimes hot; always appearing to have been inflicted by some one who had vanished on his waking. With difficulty repressing the smile, which already agitated my lip, at the tale of terror so gravely told by the truly grotesquely attired invalid. I begged him to be seated, and after unloading his head of its encumbering coverings, I soon saw the stump of the second Bicuspis pressing on the exterior periosteum or covering membrane of the

first molaris, or large grinding tooth, which, having excited inflammation, had become loosened in its *tri-fanged* socket so as to occasion its descent to an isolated state of contact with the teeth of the lower jaw, in the grinding mechanism of mastication. The irritating pressure of the stump on the membrane of the molaris (or perhaps when in full proportion before its fracture, which he said had been done by one of his kind friends anxious to relieve him from pain) had commenced the calamity which, with its attendant excruciations and the then state of excitement, admitted no hope of cure short of extraction. The tooth though formidable from size, was easily and safely removed, just as the medical attendant again entered the room, and relief of course afforded to a certain extent; but not completed till the expulsion of the stump some few days after, when every disagreeable sensation subsiding; health was established in the usal course, along with the conviction that two teeth, with much intermediate misery, owing to original bad management had



been lost, which might otherwise long have remained members of his masticating system.

A gentleman of spare habit and nervous temperament, holding a situation of trust and consequence in his present Majesty's Carlton-House Establishment, was long a victim to the distressing effects of Tic Douloureux, originating in the pressure of the first and second bicuspides of the upper jaw; or what are called the two small grinding teeth, during their uninterrupted process of pressure on each others' sides, which ultimately consigned them to destruction. He told me his misery was most extreme, and that one evening when worn down with the pain on one hand, and the various remedies recommended for his relief on the other, he had sought in repose temporary oblivion from the oppression of the complaint, he was on a sudden so attacked as to induce him to believe his life had been assailed by the stroke of an assassin. From the respite procured by repose, whether of short or long duration, he was however, soon disturbed,

and his family alarmed by his piercing shriek, and demand for light. On his wife arriving at his bed-side with a candle, he eagerly enquired who went down stairs? and then exclaimed, "some one has struck me on the face with an axe;" at the same time fearfully, and instinctively carrying his hand to the supposed *cut;* and then to the candle, as seeking confirmation of what in the first moments of his waking agitation, he had verily believed to have happened. The period of these paroxysms was previous to my appointment as *Dentist to His Majesty's Household;* but subsequent acquaintance with him having enabled me to trace the course, and the consequence of the severe complaint to which he had been subjected; I could only comment on the peculiar position from whence he had been assailed with *pain,* upon the philosophic principles of volcanic calculation, the force and data of whose destructive fires, are only to be ascertained by the situation and extent of its extinguished craters: as by the portions of the teeth remaining in the immediate vicinity of the

maxillary sinus I was soon enabled to account for, and explain the extent of the malady, which had so long militated against his health and happiness.

To substantiate the supposition of Tic Douloureux having its origin in the Teeth, countless cases might be produced analogous to those already delivered; but my chief care will be to select such as having been so *marked in variety* at their commencement, as to induce those who have been applied to for relief, to imagine the *masticating system* entirely out of the question, and by thus devoting the efforts of their practice to the *effect*, leave the distressful *cause* in full existence.

I trust I shall be able to establish this by citing two of the tremendously numerous attacks on the health, comfort, and even life itself, of the medical character early alluded to in this production.

This insidious disease which made such inroads on his health, cut up his practice, and ultimately carried him to his grave; first appeared in slight attacks, under the

character (as he himself denominated it, in conjunction with his circle of acquaintance) of "*rheumatic nervous affection of the Face,*" till the diagnostics of its subsequent attacks gave it the more serious title of *Tic Douloureux*, and one of the earliest of which took place in his carriage while in conveyance through the round of his professional avocation. Thus on his way in the intensity of Summer heat, with the glasses down to admit a freer circulation of air, he suddenly clapped his hand to his face, at the same time uttering an exclamation of anger against the coachman for careless use of his *whip* with which he supposed, he had struck him on the *face!*

The carriage was stopt, and from the harsh rebuke delivered by the Doctor, a sharp parley of reproach and denial, was for some time supported in the street. The master insisting he had been struck, and the coachman hurt at the supposition, confidently, but respectfully persisting in the impossibility of his whip-lash coming in contact with the Doctor's cheek; however, the

altercation ended in the manner it may be supposed by persons so situated, by the conviction of the master's confidence in the fact, and the submission and silence of the servant. But the wonder and oddity of the charge had hardly expended itself "like dying echoes" in comments and considerations through the family connexions, when the Doctor was again similarly attacked, but differently situated; as a wet morning had made it necessary to have the glasses up.

This was a conclusive, and convincing proof, that the former *imagined stroke of the whip*, was no other than the effect of nervous, convulsive irritation, synonimous with the recently cited case of the Gentleman when sleeping under the influence of Tic Douloureux supposing *his cheek divided by an axe*. From this time I am given to understand, the fitful irritation increased with terrible rapidity, and that his whole frame more or less became subject to its encroachments, and that having been sent for to attend a juvenile female branch of my own family at a most respectable estab-

lishment for education in Hammersmith, he said on seeing the Governess, " I am here at your earnest request, but am hardly able to sustain the transit from my own house to yours, and should not be at all surprised if I am attacked with a fit of my disease before I see the Child;" the prediction being but too faithfully verified, by his begging the Lady to stand between the bed of the invalid and himself, as he sunk into a chair covering his face with his hands, and as he suppressed his groans sadly exhibited his enfeebled frame distractedly agitated by agonies indescribable. *

A Northen Baronet of the highest respectability, residing near Kelso, for many weeks suffered misery of a distressing description, from pain proceeding from the angle of the upper jaw, in divergesscent

* Never having had the happiness to know or see the sad victim of these attacks; these circumstances have been delivered to me since his demise; and the determination more peculiarly to promulgate my Opinion for the proposed cure of the complaint.

lines with the nose and eyes;* and as in common with such attacks, were considered by his medical advisers to arise from Rheumatic Affections of the Face ; and proceeding on this opinion, the pains were endured with the assistance of paliatives, till endurance was no longer endurable, and the required relief was sought for elsewhere; and, although achieved with difficulty, and danger, proved fortunately effective. A travelling Tooth Drawer (yclept a Dentist) had been much talked of in the town, and was desired to attend the Baronet at his seat; when there arrived, the finger of the patient, was placed on the spot whence the pain was conceived to arise, and on inspection, was pronounced by the Dentist to proceed from the *dens sapientia*, "*Tooth of Wisdom*," or last tooth in the posterior part of the jaw; though candour, compelled him to declare *he could see no fault in it:* when just at the moment the pain returning

* Recurrence to the Frontispiece will aid the Reader's comprehension.

with renovated vigor, immediately fixed the Baronet's resolution for its removal, observing at the same time, "we appear to have discovered the haunt of the enemy, and if the shelter be destroyed, the chance of good riddance may be hoped for." Unfortunately the result was something similiar to his expectation, and by some mismanagement, or the improper application of a greater degree of force than was requisite, the expulsion of the pain-exciting tenant was not effected, but at the expense of a great portion of the fixtures adjacent: and though this was attended with some little inconvenience, he had the comfort to find, the long-dreaded *darting* had entirely disappeared, and left him comparatively happy; till the arrival of a similiar occurrence, (probably from the same cause) on the opposite side; and very properly considering he was about to go through, a second edition of his former sufferings, sought safer relief from more skilful hands, by removal to Edinburgh; and has since appeared to be (as far as regards Tic Douloureux) in perfect

peace. Even while this Opinion, and the last were putting to paper, one most similar, but more convincing in effect, by occular demonstration, occurred to me on Sunday, 23rd December, 1822, in Brighton.

A young woman who had once lived in my service, sought relief for a pain in her face, her present master the son of a Country Apothecary, who preferred "the pride, pomp, and circumstance of glorious war" *at home*, "to the pulverizing chime of healing drugs," said it was nothing but *tooth ache!!* and desired her to get it drawn by the family-doctor; but a dreadful gap in her mouth (similar to the sweep of fixtures in the Baronet's case) deterring her from a second dose of tooth-drawing administration at his hand, she chose to seek relief from me.

The cause of her complaint, was the forcing down of the *dens sapientia* of the left-side of the *upper jaw*, the pain commencing on its first contact with the posterior-side of the second molaris, or grinding

tooth, the greater strength of which, and fixed position, had turned the coming-down tooth into distortion. The tooth scarcely emancipated from the gum, and more easily felt than seen, I conceived the anguish she complained of, might be occasioned by its descent; and stated my opinion, that when it had pressed into its position, the pain would probably cease; and she departed on my recommending *patience*. But a night of agony through which "balmy sleep," and my poor patient were both banished from bed, and sitting up by the fire the only seeming chance of soothing her sufferings, constrained her rather to seek consolation in my Surgery, than in the morning service of a Dissenting Chapel; and though near an hour (and fasting too, for she came in when I was about to breakfast) in devising means to cast out the diminutive devil, so long a torment; I at length succeeded in relieving her, and convincing myself that Tic Douloureux, might as easily be derived from the *dentes sapientiæ*, as any other of the teeth, when disturbed to

irritation by pressure, or distortion, through the connexion, of the *direct*, or recurrent branches of the *dental nerves*.

CASE

Illustrative of the facility of fallaciously attributing *Tic Douloureux* to other excitement than irritation of the *dental nerves*; but ultimately conclusive of original position in that quarter, both as to *cause* and *effect*.

A lady who has been years in the habit of visiting Brighton; sufficiently advanced in life, and knowledge, to neglect no laudable means of looking well to the last, as far as regards the cleanliness, and comfort of her mouth; consulted me one day in November, 1822, on a tooth (*a bicuspis* or *small grinding tooth* of the upper jaw,) bearing marks of decay, and which she described as being anxious to preserve, from the losses already sustained, and aversion to artificial assistance.

An instantaneous glance in the mouth, and the peculiar position of the *tooth*, the subject of immediate consideration, induced

me to suggest her having suffered at certain times from Tic Douloureux; suffer! "say martyrdom, and then you'll be nearer the mark." "But what has induced your supposition of so terrible a truth?" "The peculiar arrangement of your teeth, Madam, at the present moment, and the situations once occupied by those removed," was my reply. "But what have the *teeth* to do with *Tic Douloureux?*" "Much," was my answer; "and although I am not prepared to prove that other causes of interruption in the blood's circulation may not irritate to agitation, *apparently distinct* and *distant* branches of the *nervous* system; yet, wherever the symptoms can be in the slightest degree traced to that portion of the face over which the *trigeminus*, or *dental branches* divide their influence, the doctrine of the justly celebrated Dr. Darwin is rendered indisputable, and the *teeth ought* and should be *suspected.*"

The Lady's reply was, it may be possible, for I have been much subjected at times, to the pains you have described in the face; but the *Tic Douloureux* with which

I suffered, was an agitation and throbbing in the fingers, wrist, and arm; finding my suspicions verified at every step of my patient's descriptive procedure: I begged, "if it lived in her memory," to state the particular progress of the attack; which was kindly thus described :---

"The approach was always intimated by a numbness, and tingling sensation down the inside of my arm, (describing with her finger the course of the *supinatur longus muscle*,) wrist, and hand; with a violent agitation of my little finger." "And was this of any long duration?" "Two or three minutes; and then the agitation of the finger ceased, and the sensations seemed to retrace their steps up the arm, in a regular reverse to their approach." "And thus, Madam, happily ended your attack of Tic Douloureux?' "Oh yes, certainly, as far as regarded Tic Douloureux! but I cannot say happily, for most remarkable the attack I have described was ever the precursor to a violent pain in the face!" at the same time placing her finger on her cheek, in the situation imme-

diately occupied by the *bicuspis* in question, and the *first molaris*, or large grinding tooth.

As I indulged my own thoughts on the Case described, I leave the reader at full liberty to do the same; with the additional declaration of the difficulty I had to steady my features from the strong excitement to smile at the artless recital of my patient's case, which rendered an attack of Tic Douloureux (though supposed wholly out of the question from distance) as plain as a demonstration in Euclid, through the course of the *muscular spiral nerve*, and its recurrent branch in connexion with the *supinatur longus muscle*, easily distinguishable on the inner-side of the arm, from near the bend of the elbow, to the wrist, on working the fingers, which on the application of the *electric spark* to the *muscle* and *nerve* described, are ever seen in violent agitation, and the litle finger in particular.

CASE

Of relaxation and temporary deprivation of power in the *musculus temporalis*, and *masseter muscles*,* as applicable to the action of the lower jaw, from *supposed* imperfection of *nervous* communication. Although this Case may be considered *hors de combat* with the speculative calculations submitted in this Treatise, *on the Causes and Effects of Tic Douloureux*, still as I have stated an Opinion

* For the information of those unacquainted with the Anatomy of the human subject, the Author has deemed it expedient to explain the position and properties of the Muscles thus alluded to, in the illustration of this Case.

The Musculus Temporalis, or Temporal Muscle, occupies the whole of the temporal cavity; or that depression in the side of the face above the cheek-bone in a line with the *ear* and *eye-brows*. It arises from part of the *parietal bone*, or that part denominated the *side of the head*, and *os frontis*, or *forehead*, covers the cavity of the jugum (that prominent part of the cheek-bone, similar in appearance to a yoke and from which it derives its Latin appellation,) under which it passes, terminating in a strong tendon inserted in the coronoid process of the lower jaw, which it draws up, and presses with considerable force against the upper.

of its attributable origin to *tension* or *relaxation* through interruption of the blood's circulation, in the immediate vicinity of the vermicose channel of nervous communication, I may fairly be permitted to promulgate, the peculiarities of this Case (differing to the extent it does in effect from all those hitherto offered) for the consideration of those it may concern; on the score that when one Case makes it appearance, who

When the jaw is put in masticating motion, if the fingers are placed on the side of the head above the temple, its position and action will be distinctly felt; and if below the cheek-bone, in a line to the middle of the lower jaw, it will be traced in association with the Masseter Muscle, so called from its use in chewing, which arises from the superior *maxillary bone*, and from the inferior and anterior part of the *os malæ*, bones composing the upper jaw. Its form and strength is derived from muscular fibres, from the whole lower and inner part of the prominence of the cheek-bone, to the little elevation which produces the cavity for the articulation of the maxilla inferioris, or lower jaw. It descends along the outer-side of the latter bone, and is attached to nearly its whole space from the coronoid process to the angle of the mouth.

shall say, by how many it may not be succeeded; especially as the successful mode of treatment by a man of my humble pretensions, conducted under the auspices of a Physician of the highest eminence, in Brighton, assisted by the lowly, but ingenious labours of a dissolute blacksmith, perfected a Cure in a short space of time: and which, I have no doubt will be found equally efficacious whenever circumstances of similar calamity may call for its application.

A Lady of title, family, and fortune, in Cheshire, endeared by the exercise of social virtues, elegant accomplishments, and literary attainments, to a large circle of acquaintance, was introduced to me at Brighton, some four or five years past, by the Physician above alluded to, for professional assistance. The beauty of her eyes, and features, at the advanced period of my introduction, were of surpassing description, and under her then appearance, caused a sigh of regret, that the fairest productions of luxuriant nature, bounteously bestowed in heavenly benignity

to bless and civilize society, should so be subjected to change and decay. Advance in life had for a length of time made substitutions necessary as the means of mastication, speech, and ornament. The whole of the upper jaw was artificially supplied; while the lower was partially assisted, with cavities cut (*a l' ordinaire*) in the *sea-horse* or ivory substance, for the reception of the few teeth remaining; and these, on my inspection, had been in due course of displacement reduced to *one*, a *cuspidatus*, *spear*, or canine tooth, of the left-side of the jaw. The jaw, when first presented to my view, was woefully, in appearance, reposing on the breast of the patient, from *relaxation* and interruption of the nerves, and moveable properties of the two *masseter muscles*, which may be easily felt by any unacquainted with their anatomical position, by putting the lower jaw in masticating motion; while the *fingers* are placed on the cheeks, in a line with the lower angle of the ear. The *cuspidatus* or canine tooth remaining in the jaw, was loose in its socket, while the gum, by which

it was surrounded, was much swollen and inflamed, and was stated by the patient to have been productive periodically of much heat and pain; probably from having been, for some length of time at least, the sustaining power of position, in the substitution, in the act of speaking and mastication. I am induced to this inference from having frequently removed teeth under similar circumstances: indeed so situated as this lady's jaw was, but for the *substitutions* being supported by the *tooth* described, the mere expansion of the springs, which adapt them to position in the mouth, as the *jaw fell* would have precipitated them on the floor. The loosened canine tooth had already caused such anguish from its unsteadiness, and occasional contact with the upper substitution, as to render its removal imperative; and although at that time, the descending of the lower jaw could not be conceived by her connexions, as at all ascribable to the *tooth in question.* I must confess I had then, and have ever since retained the opinion that the vacilliation of the loose tooth was *suspicious*

as to position, and fully connected with the falling down of the jaw, from the effect produced on the *masseter muscles*, owing to some cause of excitement with the *middle* and *lower divisions of the trigeminus* to which it is attached. In proof of which, the jaw was *not generally depressed*, but only occasionally so, and whenever elevated to its proper place, it would retain its power, and position, even in speech for sometime, and then fall down again; which certainly bears strong relation to the fitful *ebb* and *flow* of nervous affections, aided by the stronger circumstance, that by the removal of the tooth, and the help of a piece of machinery adroitly concealed under the drapery of the head dress, (rest being procured for the nerves, and muscles of the affected jaw, by supining the power of those by which they were antagonized,) a perfect cure was in a short time effected.



Mode of Accomplishment.

As being more agreeable in its application, than Plaster of Paris to the downy, and hair defended surface of the human features; a mass of wax, made soft by heat, received the impression of the *chin* and *under jaw*, which producing a perfect *fac simile* in *plaster of Paris*, another equally perfect in *lead*, enabled my *Vulcanian Artist* between *that* and his *anvil* to arrange an iron cradle for the support of the jaw; the back parts of which were moveably connected by hinge, or pivot, with two fixed pieces of the same material, a little bowed to receive the convexity of the cheeks, by the sides of which they descended from an oblong spheroidical fillet of iron suited to the form of the head; while the cradle, in which the lower jaw rested, being connected by a slanting spiral spring, in the form of a stay, admitted the proper expansion of the jaw, in the action of speech and the reception of food, but

ever in conclusion by its previously calculated force, closing such required action in quiesence: and happily for the amiable patient, and her relative connexions, with small perseverance, restored the *jaw* to the possession of all its pristine powers and properties.

Case of Tic Douloureux

In the second bicuspis tooth of the upper jaw, mistaken and treated as a nervous affection of the *stomach* and *head*, from *supposed* general debility of system.

As my design in this work is not to expose errors in medical practice, for the malicious, or more unworthy purpose of pluming an avowed Opinion, modestly tendered towards the relief of a most important and oppressive malady, but by the declarations of peculiar circumstances to induce a disposition in the Faculty when called on to exercise their skill in similar cases, carefully to follow the excellent example of the celebrated Dr. Darwin; and if at all doubtful of the diagnostics of the disease delivered by the patient, and more especially if found to be vacillating in the vicinity of the masticating system, rather to suspect the teeth of the cause, whose *state* and *situation* may be easily ascertain-

able by the eye, than rashly commence a contest with a *supposititious enemy*, whose actual haunt, or strong hold, is impervious to human inspection, and only to be approached by conjecture, too often shrouded in doubt and difficulty.

It is my intention to be equally exact in the description of this Case, as with those already stated; although necessarily leaving the scene of action less definable as to locality, from the peculiarity of the circumstances accompanying it, *namely*, the paucity of Medical Practitioners, the attending Physician, the only one in the place, and he not constant in his residence. All which would be pointing more particularly at the case than propriety would sanction, and might be deemed an unjust animadversion on individuals; to *hurt* or *offend whom*, or indeed *any one*, was never contemplated by the promulgator of these Opinions, who feels justified in the caution thus used, from having witnessed his warmest and most anxious efforts to serve, vilified and mis-

represented by *pretended friends*, who take pleasure in *perverting* and lowering the noblest thoughts and wishes of others, to the base level of their own malicious imaginations ! ! !

A Miss E---- whose interesting appearance, pleasing manners, and elegant accomplishments (though scarcely eighteen,) have been thus early as an instructress highly beneficial, having been medically recommended *Sea Air* and recreation on the Coast of Sussex, in the Autumn of 1823, was attacked with what appeared, and was denominated, *rheumatic pains in the face, ear, and head*, subsequently followed by deprivation of rest and appetite. The painful sensation being so unsteady as to position, and so fluctuative as to effect, as never to have awakened the slightest suspicion even in herself, or medical attendant, as to the precise sphere from whence her suffering might have arisen; except indeed, that in the height of some of her paroxysms, with her hand frequently placed on the *parietal* portions of the head, above the left temple, she would exclaim "O my dear

Mother I shall lose my senses, my *face burns like fire*, and something seems *forcing up into my brain.*" The distressing sensation thus depicted, and doubtlessly described to the Physician (who, as I hear, most kindly acting on the well known liberality of principle in the Faculty "that sons and daughters of Apollo should help each other," gratuitously gave his attendance, probably determined from the diagnostics delivered to him, that being similar in effect, it could be no other, than a general *bilious derangement of stomach*, manifested to the *head*, through the *immediate* or *recurrent* channel of the sympathetic nerve.

Upon this supposition the fair patient was treated with presumed hope of success, till after the usual routine of *depletionary* and *repletionary* exhibitions "in such cases recommended and provided" had proved abortive, with much time and attention lost, and little advantage gained except, from intermediate variety of suffering and occasional imagination of amendment, as the supposed disease (almost generated into

reality) appeared to advance or recede to, or from convalescence.*

About this time change of situation was suggested, and in conclusion, consigned the Case to my inspection in February 1824.

I soon discovered by the mode herein recommended the immediate seat of my little interesting patient's complaint to be in the *second bicuspis* or small grinding tooth in the left-side the upper jaw, a very small portion of which alone was visible. The disease generated by pressure of the neighbouring teeth having devastated the tooth itself, in proportion as the accompanying paroxysms and the remedies proposed, had to a certain extent been active in the discomposure of her health and comfort.

* All which may be easily conceived when it is recollected that the great sympathetic nerve forms a plexus, or combination, with the fifth and sixth pairs, and is thus through connecting consequence with the trigeminus (the three dark divisions of which are seen spreading on the Face in the Frontispiece,) not only in complete association with the *head, heart, and stomach,* but also with the *teeth, eyes, and ears.*

The *ab origine* diminutive tooth, still more diminished by disease, having been declared neither useful nor ornamental, was *quietly* and *gently* (as well with regard to the sufferings of the patient, as to prevent the possibility of fracture) rendered incapable of causing further calamity to the fair owner, by removal. On examination, after extraction, the periosteum or vascular membrane investing the root, appeared at the extremity swollen to the size of a small pea, which, on being punctured, sent forth on the lancet a quantity of fluid of the colour and consistency of cream, occasioning at once the confirmatory conclusion that could the pain attendant on the inflammatory action, which had never ceased, and was then going on in this *small* but *largely excitable* substance of bone and membrane been continued to the fullest extent, the cessation of sensibility would have ended in *exostosis*; in other words, have produced a bulbous addition of bone which the alvcolar process would have promptly enlarged to

the proportion of, rendering all attempts at removal by instruments, as difficult and abortive, as it were to displace a *screw* from its position, having a *nut* unassailably attached to the opposite side.

REMEDIES.

Of the various remedies the Art Medical has offered in mitigation of this Malady amidst Mecurials, and Antimonials, Laxatives, and Tonics, the last resorted to, has been *Carbonate of Iron;* and although in the first instance exhibiting something like success, on subsequent trials has proved equally inefficacious as the rest.

A CONCISE METHOD OF *Ascertaining the Original Seat* OF TIC DOULOUREUX, WITH THE MEANS BENEFICIALLY RECOMMENDED FOR ITS REMOVAL.

After having on the principle of Opinion, strengthened by a Series of Cases, traced Tic Douloureux to originate in pressure, or distortion of the teeth nearest in situation to the *maxillary sinus*, and thence to the extremities of the corresponding branches of the *dental nerves*, and through others in association, sending off their effects to distances which would almost put belief to doubt, I shall at once enter on the mode of ascertaining the exact situation, and seat of the complaint, wherever from the prognostics I have premised its presence may be suspected.

If in early stage of the attack, the ready finger of the sufferer, will sometimes within the mouth, and sometimes on the cheek, rest on the *present* or *recently throbbing tooth*, or *teeth*; and, by awakening sensation, soon ensure detection of the affected; if the throbbing admonitions happen to have been disregarded, the incessant state of attack ascends to the *second stage; heat*, and *redness* of the gum succeed the throbbing, which are sometimes self-relieved by spontaneous *bleeding;* should this not be the case, the aggravation rapidly increases, and the distressing sensations assert their sway on the *nerves* in the third stage; in those *dartings*, and *twitches*, already described.

If the eye be not sufficient to detect incipient *Tic Douloureux* from suspected pressure on a *tooth*, or on *teeth*, let but the index-finger-nail in gentle pressure pass up the cervix or neck of the tooth, and if the pressure of the nail be continued under the gum to the periosteum, or membrane investing the *root of the tooth*, a sensation of pain accompanied by exclamation, on the part

of the patient will proclaim the subject suspected.

This exclamation on the part of the patient will sufficiently prove the sensibilities of the tooth touched, to be in a state of irritation, excited either by undue *pressure* on *its sides*, by *one* or *both* the neighbouring teeth; or by being loosened in its socket, from lateral losses, and thus subjected to an isolated contact, with the teeth of the lower jaw in the act of mastication, producing cause sufficient, without any *visible caries* in the crowns of the teeth for all those *dartings* and *twitchings* which designate and denominate Tic Douloureux.

If lateral pressure, proceeding from the sides of the neighbouring teeth, be observed, and ascertained as the cause of irritation through interrupted circulation; by effecting a passage between the pressing teeth, with a small *watch-spring saw*, or thin flat file, as represented in the second plate, will by removal of the pressure speedily place them in repose, taking care to have the separation, so perfect that the gum may be

reached with facility; or, by the apex left, the irritation will be rather increased than diminished.

Where it may be seen, that one tooth from various circumstances, is so elongated from its socket, or abandoned, by its neighbours, as to have become *loose*, from bearing too great a proportion in mastication, the reduction (if possible) of the teeth or tooth, which may come in contact, by rubbing down the prominences with a file, will, by equalizing the service amongst those remaining, be found most remarkably to facilitate recovery from irritation, accompanied by felicitous restoration to stability; on the well-known adage, "*remove the cause and the effect will cease.*" And should the extremities of the *dental branches*, in sad remembrance of great excitement, at intervals, still *twitch* and *vibrate*, a few slight shocks of *electricity* passed on the surface, or through the cheek, by the means of a small *Leyden Phial*, of only two inches in length, supported on a Glass Electrometer, and a little *insulated conductor*, such as

are represented near the *saw* and *file*, *in plate II.* will speedily reinstate them in complete tranquillity.

To render this electrical mode of treatment more perfect, an Apparatus and Electrometer, with the *insulated conductor*, as applicable to the human face under Tic Douloureux are represented in the upper part of the drawing; while the conductor, nearly as large as in use, being formed of an oblong square piece of baked mahogany and moveable screw handle, so perforated as to support two brass wires, having knobs at their tops, and hooks at their extremities, insulated by *small tubes of glass*, when attached to the communicating cords of the Electrometer, are calculated to convey the *shock* or *spark* at once on the *vibrating nerve*, through the surface of the cheek, or the cavity of the mouth, without unavailingly dissipating its power on the lips of the patient.

The *Leyden jar*, *saw*, and *dividing file*, are also disposed for inspection.

FRONTISPIECE.

The Frontispiece represents the nervous net-work on one side of the face of the human subject, as observable after the removal of the cutaneous and integumental coverings: and as the *fifth pair*, or *trigeminus* are rather peculiarly applicable in this Treatise; their *three* great divisions, and distributions on the cheek, lower jaw, and eye, are purposely rendered more particularly conspicuous by being delineated darker at their emerging point near the *edge of the ear*. The upper division going to the forehead, eyebrow, and eye; the middle, to the cheek, and nose; and the lower branch splitting into two ramifications on the *lower jaw*.

As the *ganglions* (supposed to be *knots of nerves*, but in my humble opinion, depots or masses of *medullary matter* in aid of distant *nervous distribution*) are also *re-*

quisitely touched on; the reader unaccustomed to Anatomical communications may easily become acquainted with their appearance and form, by observing the *oblong bulb* on a branch under the *eye*, and also on the *sympathetic nerve* in its descent on the *neck* a little behind the *angle of the lower jaw.*

The under part represents a range of teeth extracted, under various cases and stages of decay, all bearing peculiar relation from *pressure* on their periosteum, or investing vascular membranes, to the nervous excitement denominated *Tic Douloureux.*

The *first* is a *molaris*, or large grinding tooth of the lower jaw, having its investing vascular membrane suffused with blood, and devastated by the unnatural and conical pressure of a neighbouring bicuspis, or small grinding tooth, from paucity of space assigned in an over-crowded jaw.

The *second*, a *bicuspis* of the lower jaw, destroyed on the same principle of pressure, as marked by the effects of the inflammatory action of the periosteum, or exterior vas-

cular covering on the neck, or soft part of the tooth immediately below its crown or enamelled head.

The *third* or rather the centre of the selection, represents a large *tri-rooted molaris* of the upper jaw, elongated from its position, through lateral pressure from its anterior and posterior neighbours, to an almost isolated contact with the teeth of the lower jaw; having from irritation, and subsequent unsteadiness, been productive of Tic Douloureux to a worthy Baronet, much in the habit of visiting Brighton. The descent and contact of the tooth with those of the lower jaw, rendering every effort short of extraction unavailing, it was removed; and observing it a fit subject for exposing the *ganglion*, *brain*, or medullary substance in the centre cavity, or cranium of the tooth; (having premised to the Baronet what it was probable I could display to his view) the smart stroke of a small hammer split the tooth into its present appearance. The *ganglion* in the form of a *white pimple*, or small pea, attach-

ing itself to the left half; while the other half of the empty cavity is distinctly visible in the right. Various may be, and probably have already been, the conjectural calculations of the powers, and properties, assigned to this diminutive medullary substance; which I have sometimes, with the aid of glasses, succeeded in seeing with connecting blood-vessels, descending or ascending the tubular cavities of the roots themselves, like fine silk; but soon dried to imperceptibility, by the action of the atmosphere. The cavity in which it is contained, has evidently a vascular lining, and in two, or three instances, where my own judgment has been overpowered in the appeals of a patient for relief from a tooth, where exteriorly, no fault was to be perceived; I have found on fracture, after extraction, *extravasation radiating* or spreading from the vascular covering of the cavity in question.

That this little *ganglion*, has great resemblance to the *cineritious* or *ashy-coloured medullary substance of the brain is certain;* and more certain it is, that there it would

not have been placed, had it not to perform, or, aid in the performance of some important function in our animal economy. On first exposure to view, the moisture which appears to invest it within, and without, is exactly similar, to that surrounding the *cineritious* substance, and nerves, already described; and may have to perform, as with them a higher office than mere lubrication to themselves, and parts adjacent. I have heard many relate, and can remember myself, when suffering under the effects of an irritated tooth, (for Dentists are no more exempt from this human plague than other people) to have felt after sometime of exterior torture in *Tic Douloureux*, a tremendous plunge as it were in the very centre of the tooth; and can well suppose to persons unacquainted with the nature of the attack, and especially to any previously enfeebled by indisposition, that it might, if occuring in sleep, through the power of imagination, be productive of all the horror depicted in the Cases described.

What share these *ganglions*, or the

sensitive matters contained in them, have in exciting these sensations, it is impossible *to say:* but I certainly on the score of *opinion*, *think* them most important.*

* These irregular and oblong bulbs, so associated with the Sympathetic Nerves, and peculiarly pointed at in the Frontispiece, for the information of those unaccustomed to their inspection, it is pleasing to perceive have been, and are considered of even higher importance in the scale of animal economy, than my humble opinion has expressed; by Anatomists of eminence, whose luminous ideas on the subject, I have had the consolation to find, in confirmation of my own, since this Work was submited to the Press.

Haller speaking of the Sympathetic Nerves, states "Super omnes, nervos ganglia sunt frequentissima, in cervice quidem tria; in thorace, lumbis, et pelvi tot, quas nervorum exspinali medulla propagines intercostalis accepit: tum in cordis vicinia, sub diaphragmate, circa arteriæ cœliacæ et mesentericæ originem, et circa renem passim in plexubus retibus. Elementi, Phys. t. 18. p. 202.

Dr. Johnston, in his excellent Essay on the use of Ganglions considers "That the ganglions are the instruments by which the motions of the heart and intestines are to the latest period of animal life rendered uniformly involuntary;" and by others "as being analagous to the brain in office," as being sources of nerves, which are distributed upon the involuntary organs, and as

independent of the brain, being *reservoirs of nervous power*, which they are capable of dispensing after the communication has been cut off.

This being the opinion of Winslow, Expos. Anet. p. 462, 4to edition, for the readers information, I give it literally, "*Ces tumeurs ganglioformes, ou ganglions different plus ou moins en volume, en couloeur, en consistence; et on les peut regarder comme autent, d' origines ou des germe desperses de cette grande paire des nerfes sympathetiquess et par consequent comme autant des petits cervaux.*" All of which have been sbsequently proved indubitable by experiments on portions of human, animal, and reptile anatomy, by the Professor Galvani, our illustrious countryman Sir Humphrey Davy, Munro, Carpue, and other Anatomical and Philosophical lumenaries of modern times.

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